

NOT FOR PUBLICATION

**UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY**

ARS TECHNOLOGIES, INC.,

Plaintiff,

v.

PNEUMATIC FRACTURING, INC.,

Defendant.

Civil Action No.: 09-4305 (PGS)

MEMORANDUM AND ORDER

SHERIDAN, U.S.D.J.

This matter comes before the Court on Plaintiff ARS Technologies, Inc. (“ARS”) and Defendant Pneumatic Fracturing, Inc.’s (“PFI”) request for claim construction. This Court held a claim construction hearing on April 13, 2011 and heard additional oral argument on June 20, 2011.

ARS is a New Jersey corporation. ARS allegedly provides environmental soil fracturing, injection, and advanced drilling services, including soil remediation services. ARS remediates soil that is contaminated with halogenated hydrocarbons and soluble metals more noble than iron. PFI also is a New Jersey corporation. PFI allegedly provides environmental remediation services to consulting, government, and private organizations. According to ARS, PFI offers these environmental remediation services throughout the country. On May 4, 2009, ARS filed a complaint (“ARS’s Complaint”), in which ARS alleges that PFI infringed on ARS’s patent, United States Patent No. 5,975,798, which was entitled “In-Situ Decontamination of Subsurface Waste Using Distributed Iron Powder” (the “Patent”).

This Opinion addresses the proper construction of the disputed terms in the Patent.

I

ARS contends that the Patent “discloses a novel invention that uses minimal quantities of iron to remove contaminants from soil and groundwater, especially halogenated volatile organic compounds (“HVOC”), from subsurface geological formations.” (*See* ARS’s Opening Brief, p. 1). According to ARS, HVOCs seep into surrounding soil when they are used as solvents. (*Ibid.*) HVOCs do not easily bio-degrade and are “often transported by groundwater to locations far beyond” the site of the contamination. (*Ibid.*)

According to ARS, there exist “various methods” of decontaminating the affected soil and groundwater. (*Ibid.*). In particular, according to ARS, one “common method of treating contaminated groundwater was to install massive walls containing absorptive and/or transformative material . . . in the path of flowing groundwater.” (*Ibid.*). As the groundwater moves through the wall, the groundwater contacts the material in the wall (including carbonaceous material and iron), which effectively removes or remediates the contaminants. (*Ibid.*).

ARS insists that a critical difference separates the novel technology described in the Patent from the “bludgeon approach of the prior art.” (*Id.* at 2). In particular, ARS maintains that the technology reflected in the Patent “focuses on using pre-selected quantities of iron based on the amount of contaminants in the soil and groundwater.” (*Ibid.*). Moreover, the Patent does not reflect the use of the aforementioned reactive walls to assist in the remediation effort. (*Ibid.*) Rather, the Patent instructs that “iron can be injected directly into subsurface sources of contamination by means of deep tilling, hydraulic injection or multi-phase inert gas (such as nitrogen)/water injection.” (*Ibid.*). According to ARS, this allegedly innovative treatment method “minimizes the amount of

iron used and provides a more elegant approach to solving the [remediation] problem.” (*Ibid.*).

II¹

In order to prove patent infringement, a plaintiff must establish that the patented claim “covers the alleged infringer's product or process.” *Markman v. Westview Instrs., Inc.*, 517 U.S. 370, 374 (1996) (internal quotation marks and citations omitted). The first step in a patent infringement analysis therefore involves a determination of the scope of the patent’s claims. *Johnson Worldwide Assocs., Inc. v. Zebco Corp.*, 175 F.3d 985, 988 (Fed. Cir. 1995) (citations omitted). It is “[t]he duty of the trial judge [] to determine the meaning of the claims at issue.” *Exxon Chem. Patents, Inc. v. Lubrizol Corp.*, 64 F.3d 1553, 1555 (Fed. Cir. 1995) (citation omitted).

“It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (internal quotation marks and citations omitted). A court must “look to the words of the claims themselves, both asserted and nonasserted, to define the scope of the patented invention.” *Vitronics Corp. v. Conceptoronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996) (citation omitted). “[T]he words of a claim are generally given their ordinary and customary meaning.” *Phillips*, 415 F.3d at 1312-13 (internal quotation marks and citations omitted). “[O]rdinary and customary meaning” is defined as “the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention.” *Phillips*, 415 F.3d at 1313 (citations omitted). The Federal Circuit has further explained:

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Judge Pisano has articulated the proper standards that a court must use when constructing claims. See *Janssen, L.P. v. Barr Labs., Inc.*, 2009 WL 424389, at *1-2 (D.N.J. Feb. 19, 2009). The below section of the Memorandum borrows heavily from the *Janssen* decision.

It is the person of ordinary skill in the field of the invention through whose eyes the claims are construed. Such person is deemed to read the words used in the patent documents with an understanding of their meaning in the field, and to have knowledge of any special meaning and usage in the field. The inventor's words that are used to describe the invention – the inventor's lexicography – must be understood and interpreted by the court as they would be understood and interpreted by a person in that field of technology. Thus the court starts the decision making process by reviewing the same resources as would that person, *viz.*, the patent specification and the prosecution history.

Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1477 (Fed. Cir. 1998).

The proper meaning of a claim may be discerned from various sources. *Janssen*, 2009 WL 424389 at *2. These sources include “the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art.” *Phillips*, 415 F.3d at 1314 (internal quotation marks and citations omitted). Extrinsic evidence includes evidence that is outside of the patent and prosecution history, and therefore includes dictionaries and treatises. *Id.* at 1317. (citations omitted). While a court may review extrinsic evidence, the extrinsic evidence is generally given less weight in the claim construction process. *Ibid.* (citations omitted).

III

The parties have identified the disputed terms:

1. Introducing a Quantity of Zero Valent Iron Powder
2. Selecting Said Quantity
3. Reaction Product Solutions
4. Relatively Constantly Acidic

5. When Presented on a Graph²
6. Liquid Solution of Iron Powder

The Court will address each of these in turn.

Introducing a Quantity of Zero Valent Iron Powder

The first disputed term is “introducing a quantity of zero valent iron powder.” (Patent, C10, LL13-14). That phrase is set forth in Claim One:

A method for the in-situ decontamination of a given volume of soil containing one or more contaminants selected from the group consisting of soluble heavy metals more noble than iron, and soluble, insoluble and free product halogenated hydrocarbons, the method comprising *introducing a quantity of zero valent iron powder* directly into the soil volume

(Patent, C10, LL9-15) (emphasis added). ARS’s proposed construction for this phrase is “introducing a quantity of zero valent iron in powder form without reaction controlling additives (*like copper and palladium*).” (emphasis added). PFI, on the other hand, argues that the phrase should be construed as “introducing a quantity of only zero valent (Fe^0) iron, without any *buffers, catalysts*, or reaction controlling materials, in powder form *wherein the iron particles are smaller than iron filings and iron chips*. (emphasis added).

There are two significant differences in the suggested construction language. The first difference is that PFI adds the term “without any buffers [or] catalysts.” ARS discounts same because such language cannot be found in the intrinsic evidence. (*See* ARS’s Opening Brief, p. 10).

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At the *Markman* hearing on April 13, 2011, PFI informed the Court that PFI no longer believes that any construction is needed for this term. As such, because the term “when presented on a graph” no longer requires any construction, the Court will not set forth any construction analysis for this term.

And, second, PFI adds the term “wherein the iron particles are smaller than iron filings and iron chips.” ARS disputes same because the language describing the size of zero valent iron does not suggest it must be smaller than iron filings or iron chips. (*See* ARS’s Opening Brief, p. 11).

With regard to PFI’s second suggested term – “wherein the iron particles are smaller than iron filings and iron chips” – PFI notes that the term “powder” is used consistently throughout the Patent. (*See* PFI’s Opening Brief, p. 5). For example, the term “powder” is used in the title of the Patent. (*See generally* Patent, p. 1). In addition, the term “powder” is used in at least three places in the Patent. (*See* Patent, C3, L8; C7, L26; C9, LL32-34). PFI concludes that Claim One “cannot encompass iron filings or iron chips, and [therefore] PFI’s proposed construction requiring iron powder particles to be smaller than iron filings or iron chips correctly excludes iron filings or iron chips.” (PFI’s Opening Brief, p. 5).

The Court declines to add this PFI-recommended qualifier to the size of the iron powder particles. This Court has not found anything in the Patent that would require the size of the particles to be smaller than iron filings and iron chips. Rather, the claims discuss “powder” only. In fact, the term “iron powder” is employed six times in the claims themselves. (*See* Patent, C10, L14; C10, LL16-17; C10, L23; C10, L28; C10, L36; and C10, L37).

The five claims should be read narrowly. *Becton Dickinson & Co. v. C.R. Bard Inc.*, 922 F.2d 792, 799 n. 6 (Fed. Cir. 1990) (citation omitted) (“Nothing in any precedent permits judicial redrafting of claims. At most there are admonitions to *construe* words in claims narrowly, if possible, so as to sustain their validity.”). Here, the relationship between iron filings and/or iron chips and powder is not claimed or mentioned in the Patent. It appears that the only substantive discussion of iron filings and/or iron chips surfaces in the portion of the specifications which specifically state that

“treatment of soluble heavy metal ions and halogenated hydrocarbons in groundwater can be carried out using iron powder, granular iron metal filings or iron chips.” (*See* Patent, C2, LL27-29). This sentence, however, gives no support to the size of the particles encompassed within “a quantity of zero valent iron powder.” (*See* Patent, C10, L14). In fact, this sentence refers to previously-existing remediation technology, as opposed to the apparently innovative technology detailed in the Patent. (*See* Patent, C2, LL27-40). As such, the “quantity of zero valent iron powder” utilized in the novel remediation effort does not need to be in powder form with “iron particles [] smaller than iron filings and iron chips.” (*See* Patent, C10, L14).

PFI contends that the zero valent iron powder must be “without any buffers, catalysts, or reaction controlling materials.” ARS, to the contrary, maintains that the zero valent iron powder must be “without reaction controlling additives (like copper and palladium).” These two suggested interpretations may be discussed together because they both resolve or review the prior art.

As interpreted by PFI, the term “without any buffers [or] catalysts” derives from the Patent’s prosecution history, in which ARS specifically indicated that “iron powder can be used essentially by itself.” (ECF No. 55-1, ARS 000067). That statement in the prosecution history, however, is taken out of context by PFI. Within the prosecution history, ARS was required to distinguish its new invention from the technology embodied in the patents previously issued to Haitko et al. (Patent No. 5,362,402) and Batchelor et al. (Patent No. 5,789,649). (*See generally* ECF No. 55-1, ARS 000067). According to ARS, the technology embodied in the Patent is different from that reflected in these two patents because this new technology “minimizes the amount of iron used and provides a more elegant approach to solving the problem.” (ARS’s Opening Brief, p. 2). As a result, this new technology avoids *the need* to use buffers and controlling agents. (*See generally* ECF No. 55-1, ARS

000067). There does not appear to be anything in the Patent's abstract, specifications, or prosecution history that indicates that these substances *cannot be used* in a remediation effort using the newly patented technology.

Despite this, there does appear to be language in Claim One that inhibits the use of reaction controlling additives. (*See generally* Patent, C10, LL9-21). ARS agrees to limit the reaction controlling additives that cannot be used to only two chemical elements – copper and palladium – because, as explained in the prosecution history, the Batchelor Patent apparently specifically references the use of copper and paladium as means of achieving “rapid dehalogenation.” (*See generally* ECF No. 55-1, ARS 000066). Elsewhere in Claim One, however, the Patent states that “the rate of treatment of the contaminants[] involv[es] solely the iron powder and the amount of contaminants present in the soil volume.” (*See* Patent, C10, LL15-18). This specific language in Claim One ratifies that no reaction controlling additives are to be used in the remediation effort.

In sum, the term “introducing a quantity of zero valent iron powder” is constructed to mean “introducing a quantity of zero valent iron in powder form without reaction controlling additives.”

Selecting Said Quantity

The second disputed term is “selecting said quantity.” (Patent, C10, L15). The disputed phrase is set forth in Claim One:

A method for the in-situ decontamination of a given volume of soil containing one or more contaminants selected from the group consisting of soluble heavy metals more noble than iron, and soluble, insoluble and free product halogenated hydrocarbons, the method comprising introducing a quantity of zero valent iron powder directly into the soil volume, and *selecting said quantity* such that the rate of treatment of the contaminants, involving solely the iron power and the amount of the contaminants present in the soil volume, yields reaction product solutions having a pH that initially increases to a maximum followed by a decrease to a level that remains relatively

constantly acidic while the contaminants are being treated.

(Patent, C10, LL9-21) (emphasis added). ARS's proposed construction for this term is "selecting the iron powder *based on the amount of contaminants in a given volume of soil such that the weight ratios of iron to contaminants are within a range of about 6:1 to 120:1.*" (emphasis added). PFI, on the other hand, argues that the phrase should be construed as "*preselecting the quantity of zero valent iron powder prior to introduction of the zero valent iron into the soil volume to achieve an increasing and then decreasing pH.*" (emphasis added).

The PFI-suggested construction begins with the word "preselecting" "Preselect" is an intrinsic verb which means "to choose in advance usually on the basis of a particular criterion." *See Merriam-Webster's Dictionary, available at* www.m-w.com. In this case, there is no advanced selection. Rather, the first step of the methodology is the introduction of a quantity of zero valent iron powder in order to trigger a particular process. (*See Patent, C10, LL13-21*). As such, the word "preselect" is not adopted in the construction of this term.

PFI suggests another qualifier for the quantity of zero valent iron powder that is introduced into the soil. In particular, PFI contends that "selecting said quantity" shall reflect the fact that the selected "quantity of zero valent iron powder" must trigger "an increasing and then decreasing pH." This Court is not convinced that this is a correct interpretation of the term. In fact, "selecting said quantity" cannot include the concept of a reaction production solution that rises and then decreases in pH level because this concept of a rising and falling pH level is reflected later in the same sentence in Claim One. (*See Patent, C10, LL18-21*). In particular, Claim One already explicitly provides that the amount of zero valent iron powder should be selected "such that the rate of treatment of the contaminants . . . *yields reaction product solutions having a pH that initially*

increases to a maximum followed by a decrease . . .” (See Patent, C10, LL18-19) (emphasis added).

It is well-established that a court must avoid using superfluous language in constructing the language of a particular patent. See *Mangosoft, Inc. v. Oracle Corp.*, 2004 WL 2193614, at *8 (D.N.H. Sept. 21, 2004), *aff’d*, 525 F.3d 1327 (Fed. Cir. 2008) (“To avoid rendering the word ‘local’ entirely superfluous (or, at best, redundant), it must be given a meaning other than ‘coupled.’”). Here, the PFI-proposed qualifier for the quantity of zero valent iron powder renders particular language redundant. As such, this Court will not adopt PFI’s construction of this term.

ARS maintains that “selecting said quantity” must be based upon particular weight ratios of iron to contaminants. This Court is not convinced, however, that this is a correct interpretation. Here, Claim Two references “the weight ratio of said selected quantity of iron powder to the initial quantity of the contaminants within the soil volume.” (Patent, C10, LL22-24). By referencing “the weight ratio” of the “selected quantity” of zero valent iron powder, the lexicographer made clear that “said quantity” does not inherently encompass a particular range of weight ratios. (Patent, C10, LL22-24). The case law establishes that courts must take note of language used in different claims of the same patent: “Differences among claims can [] be a useful guide in understanding the meaning of particular claim terms. For example, the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim.” *Phillips*, 415 F.3d at 1314-15 (citations omitted).

Here, the presence of certain language in a dependent claim – in this case, Claim Two – signifies that such language should not be “read into” a term in the independent claim – Claim One. This Court therefore will not adopt ARS’s construction of this particular term. Because the Court is convinced that “selecting said quantity” reads clearly as written, this Court sees no reason to

construct this particular term.

Reaction Product Solutions

The third disputed phrase is “reaction product solutions.” (Patent, C10, L18). The disputed phrase is set forth in Claim One:

A method for the in-situ decontamination of a given volume of soil containing one or more contaminants selected from the group consisting of soluble heavy metals more noble than iron, and soluble, insoluble and free product halogenated hydrocarbons, the method comprising introducing a quantity of zero valent iron powder directly into the soil volume, and selecting said quantity such that the rate of treatment of the contaminants, involving solely the iron power and the amount of the contaminants present in the soil volume, yields *reaction product solutions* having a pH that initially increases to a maximum followed by a decrease to a level that remains relatively constantly acidic while the contaminants are being treated.

(Patent, C10, LL9-21) (emphasis added). ARS’s proposed construction for this phrase is “reaction products that show an increase then decrease in pH while the contaminants are being treated.” PFI, on the other hand, maintains that this phrase should be construed as “products in solution resulting from treatment of contaminants in the treatment zone.”

This Court will not adopt ARS’s construction because such a construction would render duplicative the language following the term “reaction production solutions.” If “reaction production solutions” signifies “reaction products that show an increase then decrease in pH while the contaminants are being treated,” then the lexicographer would not have added to Claim One the specification that the yielded reaction product solutions should “hav[e] a pH that initially increases to a maximum followed by a decrease” (Patent, C10, LL18-19). As mentioned, a court constructing a claim should avoid using language that would not add any “meaning to the term [that is] not already implicit in the rest of the claim.” *Mangosoft, Inc.*, 525 F.3d at 1330-31 (citation

omitted).

Although this Court does not agree with ARS's interpretation of the disputed term, this Court adopts a portion of PFI's construction. The intrinsic evidence demonstrates that "reaction production solutions" must be in the form of a solution. Claim One itself specifies this by noting that "reaction production *solutions*" are yielded as a result of the introduction of zero valent iron powder. (*See* Patent, C10, LL13-18) (emphasis added). ARS appears to agree with this interpretation, stating in its reply brief that "[t]he results of the treatment are reaction production *solutions*" and that "those *solutions* are decontaminated groundwater." (ARS's Reply Brief, p. 8) (emphasis added).

Despite agreeing with this portion of PFI's construction, this Court disagrees with PFI's construction regarding the location of these reaction product solutions. In particular, nothing convinces this Court that "reaction product solutions" result specifically from the "treatment of contaminants" in one particular area – namely, "the treatment zone." PFI's opening brief, reply brief, and oral argument fail to convince this Court that the term shall be constructed to include this language.

In conclusion, the term "reaction product solutions" is construed to mean "products in solution resulting from treatment of contaminants."

Relatively Constantly Acidic

The fourth disputed phrase is "relatively constantly acidic." (Patent, C10, L20). The disputed term is set forth in Claim One:

A method for the in-situ decontamination of a given volume of soil containing one or more contaminants selected from the group consisting of soluble heavy metals more noble than iron, and soluble, insoluble and free product halogenated hydrocarbons, the method comprising introducing a quantity of zero valent iron powder directly into the soil volume, and selecting said quantity such that the rate of

treatment of the contaminants, involving solely the iron power and the amount of the contaminants present in the soil volume, yields reaction product solutions having a pH that initially increases to a maximum followed by a decrease to a level that remains *relatively constantly acidic* while the contaminants are being treated.

(Patent, C10, LL9-21) (emphasis added). ARS's proposed construction for this disputed phrase is "the pH of the reaction product solutions during the treatment period first increases then decreases."

PFI, on the other hand, argues that the phrase should be construed as "the pH of the reaction product solutions remains slightly less than about 7 during the treatment period following initial increase to maximal level."

A solution is considered to be acidic when it has a pH level less than 7. *See* Hawley's Condensed Chemical Dictionary, 12th ed., 1993, p. 15. This Court does not adopt ARS's proposed construction. Nothing in the evidence dictates that a "relatively constantly acidic" pH level translates to a pH level that "during the treatment period first increases then decreases." (Patent, C10, L20). In fact, installing such a definition into the phrase "relatively constantly acidic" would render Claim One redundant. The notion of a "relatively constantly" acidic pH level is specifically used – not generally used – in Claim One. (Patent, C10, L20). In particular, the phrase is used to define the pH level of the reaction product solutions during the period of time after the pH level already increased to its maximum level and then decreased. (Patent, C10, L20). It is at this moment – *after* the increase and the decrease of pH levels *has already happened* – that the pH level is to "remain[] relatively constantly acidic" throughout the remediation process. (Patent, C10, L20). This Court therefore rejects ARS's proposed construction.

This Court next turns to addressing PFI's construction of "[t]he pH of the reaction product solutions remains slightly less than about 7 during the treatment period following initial increase to

maximal level.” This Court must evaluate what “relatively” signifies. (Patent, C10, L20). PFI’s proposed construction does not adequately shed light on what “relatively” means. (Patent, C10, L20). This Court finds that it invites too much vagueness to equate “relatively constantly acidic” with a pH level “slightly less than about 7.” (Patent, C10, L20).

ARS suggests that the term “relatively” acidic signifies that a solution is acidic *in relation* to the maximum pH level that arose during the earlier stage of the remediation process. (See ARS’s Reply Brief, p. 9). This Court disagrees. A “relatively constantly acidic” pH level is not merely another way of specifying a pH level that is constantly acidic *in relation* to the peak pH level that arose during the remediation process. (Patent, C10, L20).

It is worth noting that the term “relatively” is defined to mean “somewhat.” See Merriam-Webster’s Dictionary, *available at* www.m-w.com. This qualifier for the term “constantly acidic” makes sense. After all, a review of the intrinsic evidence – and, in particular, Table 2 and Table 3³ – reveals that the pH levels after the increase and decrease in pH levels were *somewhat* “constantly acidic.” Put differently, the pH level remained acidic with minor variations during this later stage in the remediation process. By way of example, when an experiment used 120 milligrams of the E-200 iron powder, the pH level was 5.4 on Day 0, 5.9 on Day 3 (which documents the rise in pH level), 5.7 on Day 5 (which documents part of the fall in pH level), 5.6 on Day 7 (which further documents part of the fall in pH level), and, finally, 5.7 on Day 14 (which demonstrates the minor variation in the pH level after the prior rise and fall in pH level). (See Patent, Table 2).

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When reviewing these tables, the Court did not place weight on the experiment conducted using six milligrams of the S-Fe iron powder. As the Patent notes, “with the S-Fe iron, the weight ratio of 6 . . . does not provide sufficient iron for properly dehalogenating the TCE.” (Patent, C5, LL61-64).

In conclusion, the term “relatively constantly acidic” is construed to mean “the pH of the reaction product solutions is constantly acidic with minor variations.”

When Presented on a Graph

This phrase is no longer disputed by PFI. As such, “when presented on a graph” does not require any construction.

Liquid Solution of Iron Powder

The final disputed phrase is “liquid solution of iron powder.” (Patent, C10, L36). The disputed phrase is set forth in Claim Five:

A method according to claim 2 wherein the iron is introduced into the soil volume through an injection well using a multi-phase injection system comprising a pressurized gas and a *liquid solution of iron powder* for injecting the iron powder through openings spaced along the length of the well directly into channels radiating away from the well.

(Patent, C10, LL33-38) (emphasis added). ARS’s proposed construction for the disputed phrase is “a liquid slurry of iron powder.” PFI, on the other hand, argues that the phrase should be construed as “a uniformly dispersed mixture at the molecular level of iron solute in a liquid solvent.” PFI’s construction of these terms stems primarily from the dictionary definition of a “true solution.” (PFI’s Opening Brief, p. 13). Specifically, a “true solution” is defined as “a uniformly dispersed mixture at the molecular or ionic level, of one or more substances (the solute) in one or more other substances (the solvent).” *See* Hawley’s Condensed Chemical Dictionary, 12th ed., 1993, p. 1075. PFI does not cite any substantive intrinsic evidence in support of this interpretation. Rather, this dictionary definition provides the sole foundation for PFI’s interpretation.

Unlike PFI, ARS opts to look first to the intrinsic evidence in constructing this term. (ARS’s Opening Brief, p. 23). As ARS notes, the abstract for the Patent specifically makes reference to “an

atomized iron powder-water slurry [that] is used to inject pre-determined quantities of reactive zero valent iron powder” (emphasis added). (*See Patent*, p. 1). ARS maintains that the abstract therefore confirms that a “liquid solution of iron powder” is best defined as a “liquid slurry of iron powder.” (ARS’s Opening Brief, p. 23). PFI’s reply brief fails to address this explicit language in the abstract.

“[U]nder Federal Circuit precedent, intrinsic evidence carries much greater weight [than extrinsic evidence].” *Merck & Co., Inc. v. Sandoz Inc.*, 2011 WL 831839, at *3 (D.N.J. Mar. 3, 2011). Here, only ARS has set forth persuasive intrinsic evidence. In addition to not presenting any intrinsic evidence, PFI also failed to specifically address the strong point that ARS made regarding the language used in the abstract – which specifically referenced “an atomized iron powder-water slurry.” (*See Patent*, p. 1).

As a result of the foregoing, this Court will adopt ARS’s construction for this term. The term “liquid solution of iron powder” is constructed to mean “liquid slurry of iron powder.”

IV

This Court has reviewed all submissions and heard oral argument. For the reasons set forth in the above Memorandum,

IT IS on this 20th day of June 2011, ORDERED that the following disputed terms shall be constructed as follows:

The term “introducing a quantity of zero valent iron powder” is constructed to mean “introducing a quantity of zero valent iron in powder form without reaction controlling additives;”

The term “selecting said quantity” is constructed to mean “selecting said quantity;”

The term “reaction product solutions” is constructed to mean “products in solution resulting from treatment of contaminants;”

The term “relatively constantly acidic” is constructed to mean “the pH of the reaction product solutions is constantly acidic with minor variations;” and

The term “liquid solution of iron powder” is constructed to mean “liquid slurry of iron powder.”

s/Peter G. Sheridan
PETER G. SHERIDAN, U.S.D.J.

June 20, 2011